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Physical Characteristics

144 563 Anthropometric measurements made on 230 living adults have been forwarded to Dr. Harry L. Shapiro for analysis. About 25 individuals measured were of mixed blood; the remainder were full-blooded Pukapukans, an equal number of males and females. The amount of racial or of early interisland mixture is not great. Two Manihikian women, castaways, married and settled down on the island about 10 generations ago. Recent intermixture with whites is readily observed. There is no discrimination against or in favor of those of mixed blood. The average stature of Pukapukan men and women 142 is noticeably less than that observed for other Polynesian groups. Women are shorter than men. The presence of the epicanthic fold was noted in several individuals. The glabella is more prominent in men than in women. Face type seems to vary between a narrow, long face with a long nose and a wide face with a short, broad nose. It is possible that analysis will reveal two physical types based on these distinctions. Lips in general are thin or medium thick. The hair is black; low and medium waves are common. Body hair is scanty on both sexes. Skin color is a light brown which becomes very dark on prolonged exposure to the sun. The skin color of infants is extremely fair.

Motor Habits

516 Little sex differentiation was observed in motor habits. The common position in sitting is "turkish fashion". The legs are crossed with knees bent and resting on the inside portion of the sole of the foot, the outside edges of the feet resting on the ground. A common variation is to raise the right foot and rest it on top of the left knee. This is the position for all sedentary activities, whether mat plaiting, food preparation, sennit making, or simple rest. Only a man braiding sennit sits with outstretched legs; he loops the free end of the sennit round the toe of an extended foot to obtain a tension on the cord.

481 [164] The bent-knee gait is common in walking. Apart from individual walking habits due to previous yaws infection of feet and legs, the common habit is to walk with the palms hanging at the side and turned inward, the toes pointing straight ahead. Running and jumping habits seem to be similar to those of the ordinary unskilled white person. Children crawl on hands and knees and on hands and feet.

513 192 Both sexes lie and sleep (*moe*) in a wide variety of positions, on the side, prone, or supine. The Pukapukan distinguishes by descriptive names more than thirty-five different types of sleep according to position, movements during sleep, and soundness of sleep. The amount of sleep for adults varies from 4 to 8 hours each night, sometimes with an hour or more of extra sleep during the day. Young children sleep whenever they are tired. Children

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Young children sleep whenever they are tired. Children from about 6 years of age onward average about 8 hours of sleep each night. Fires are occasionally kept burning late into the night when mosquitoes are troublesome.

Men micturate in a standing position; women squat on the heels or stand with knees bent. Both sexes defecate in a position squatting on both heels.

Cutting habits vary according to the instrument employed. In general, a knife is moved away from the body, a native cutting or scraping instrument toward the body. Adzing is, of course, toward the body.

Heavy weights, such as canoes, are lifted from the ground with the arms in front of the body and carried just clear of the ground. A house roof is carried on the shoulders of a number of men who get inside the roof while it is on the ground and hoist it onto their shoulders. A few coconuts are carried in the hands, with or without a basket; a large number are balanced on the shoulder. Many coconuts are carried on a rough carrying pole, weighted at both ends and balanced at its middle point on the shoulder. The right shoulder is generally preferred. Women generally carry weights balanced on the head, using a pad made of a bunch of leaves placed between the head and the burden.

Climbing coconut trees and coconut husking are described on page 86. Swimming is naturally acquired behavior and is not taught to children. Pukapukans are not great swimmers or divers, but use the sea mostly for bathing, when they run or wade from the beach and then suddenly duck. Children are in the water a great deal; they play at water splashing, surface diving, and underwater swimming games. Adults rarely play swimming games. In diving for *Tridacna* shellfish, adults dive from the surface by elevating the buttocks and depressing the head.

Casual observation indicates that left-handedness (*lima mayui*) is common in both children and adults. This was observed in adults in the use of implements and in the handling of darts in games, in children when dancing.

The toes are used extensively for picking up objects from the ground and for holding objects when both hands are engaged and when purchase is required.

Both men and women pole and paddle canoes today. The individual poles a canoe sitting, standing on the floor of the canoe, or standing with one foot on each gunwale. Paddling is done on either side of the canoe with equal ease. The paddle is grasped with both hands, fingers pointing to the front, thumbs to the rear. It is unusual for a canoe crew to sing or chant in rhythm to the paddling. The paddle is plunged vertically into the water and the stroke is fore and aft. Two types of strokes are used: *alo atu pele* is a long, even, powerful stroke with the full stretch and strength of arms and shoulders, dipping the paddle blade deep into the water, and used for long distances when consistent power is required; *alo waingo* is a short, quick, shallow stroke,

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501 almost a jab of the blade into the water, used when a sudden spurt of speed is required to take advantage of a following wave to shoot across the reef. In steering, the paddle is struck into the water as far away as possible and then pulled back through the water.

GESTURES AND EMOTIONAL EXPRESSIONS

201 Various conventional gestures are used for communication without speech. Affirmation (*uahatika*) is expressed by raising the two eyebrows without moving the rest of the face. Used in answer to a negative question, the gesture indicates that the statement in the negative is correct. Doubt is expressed by screwing up the nose and mouth, wrinkling the forehead, at the same time nodding the head. A distant place or person is indicated by pointing with the forefinger. In beckoning to a person, the arm is flexed with the palm pointing toward the person addressed, and the fingers are closed against the palm and quickly opened. The motion is repeated if necessary. Height is indicated by the outstretched arm, palm pointing to the ground. The size of a fish is always indicated by marking off its approximate length with the 261 fingers of one hand on the other arm. A gesture of insult consists in pointing the fundament toward the person insulted; at times the gesture is ac- 578 companied with words like "Tau kanokano" (Your anus). Pointing and shaking of the forefinger accompanies the hurling of verbal insults at another 201 person. Other attitudes which occur in story telling are mentioned elsewhere (1). Concentration or the exertion of intense physical effort is marked 609 by semi-protrusion of the tongue, grinding of the teeth, or contorting of the 156 face. Shyness or embarrassment in the presence of white people is shown by women and children turning away the head, or lowering the head and covering the mouth, nose, and lower part of the face by the palm and spread-out fingers of the hand. No man was ever observed displaying this gesture. 864 Naked children who become suddenly self-conscious at the approach of a white person cover the genitals with the hand.

201 Display of affection is marked by pressing the nose against another per- 576 son's face or other part of the body, at the same time inhaling (*songi*) 532 through the nose. The nose is often applied to the back of the hand of a white person. An excellent account of leave-taking after a visit is given in detail in the story of Te Mala and Totolos (1). The common greeting on the road is "Ka wano koe ki wea?" (Where are you going?). The person addressed answers in detail or in evasion according to his inclination.

827 Sneezing is a sign that someone elsewhere is talking about the sneezer, probably in a gossipy or scandalous fashion. Yawning merely expresses bodily fatigue.

516 Both men and women are notoriously given to the habit of leaning against 156 each other in close bodily contact on every occasion. A group of men stand-

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ing watching a competition such as coconut husking, or sitting and talking, wrap their arms about each other and lean on each other's shoulders. Though any adult adopts this position, it is particularly striking to the observer when it occurs among men. When relaxing, women lean against other women. A woman frequently lies with her head on the lap of another woman. Less frequently, a young woman, watching a group sport, leans against an older man and wraps her arms over his shoulder. Occasionally the older man may rest his head in her lap. These attitudes, taken up in large or small gatherings, occasion no comment of any nature nor any embarrassment to the parties concerned.

ENVIRONMENT

Topography

The atoll of Pukapuka lies about 390 miles northeast of Samoa, 715 miles northwest of Rarotonga. Its nearest neighbor, Nassau, is about 42 miles southeast and was formerly occupied by a colony from Pukapuka.

Pukapuka consists of three islets with a land area of 1,250 acres, and a few sand banks grouped around a barrier reef (fig.1,*a*) that encloses a lagoon about 5 miles long and 2 to 3 miles wide. Pukapuka, the northern islet, is about 1 mile wide and has a greatest depth of about ½ mile. The entire population of the atoll lives on the lagoon shore of Pukapuka (fig.1,*b*). The word Pukapuka has no meaning but various etymologies. The old name for the atoll, Te Ulu-o-te-watu (Head-of-the-rock), refers to the legendary origin of the islands and is commonly used in old chants. The occupied part of this islet is generally called Wale (Home). The two southern islets, Motu Ko and Motu Kotawa, form reserve food lands (*motu*—translated throughout as reserve) and are visited occasionally for food and copra supplies. Each reserve has a small permanent settlement of houses occupied during these visits.

The landing passage (*ava*) on the western side of Pukapuka (Wale) is used by canoes and flat-bottomed boats only. All supplies and passengers are transferred outside the reef to native canoes for transport across the reef to the landing beach. The western-most section of the islet is occupied by the people of Yato village. This village extends across the causeway which spans an arm of the lagoon and occupies further ground east as far as the present London Missionary Society church. Formerly this eastern site was the only site of Yato village. The building of the causeway about 60 years ago and an epidemic sickness suggested the transfer of part of the village to its present western site. The boundary of this village runs from the lagoon beach through the middle of the church and so to the outer beach. The section of land north of the village road embraces one reserve of Yato called Nisa. The other reserve is Motu Kotawa.

The houses of Loto village are contiguous with those of the eastern section of Yato. They stretch along the lagoon and across the island to the outer beach, a location adopted after the tidal wave of 1914. North of the village road running through Loto stretches the only reserve of Loto, Usa, which extends to the outer beach. The third and eastern-

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and kept on rough platforms made by laying longitudinal members across the tiebeams of the house. Plaited pandanus satchels (*tuluma*, p. 134) for valued fishhooks and larger satchels of the same type for malos and other items of dress were also kept on the tiebeam platforms.

Plaited pandanus pillows (*ulunga laukanu*, p. 134) and wooden headrests (*ulunga lakau*; fig.12,*d*) were in occasional use. Most people, however, did not go to the trouble of making a special pillow but used for this purpose any suitable block of wood. Soft driftwood was favorite material, a piece of cork of suitable size and thickness being most prized. Today, the usual headrest is a block of wood inserted into a European pillowcase and packed tight with a thin layer of kapok. This pillow combines a desired hardness with the prestige value of using a European object.

Wooden back rests (*teke*; fig 12, *c*) were occasionally made in former times. Made of *uakanava* wood, they were used for resting in a reclining position inside or outside the house.

Insect switches (*uene*) are in great demand when mosquitoes (*namu*) become vicious:

These switches are quickly made by superimposing three sections from the tip end of coconut leaf midribs, each section carrying 10 to 20 leaflets. These are bound together by several transverse turns of fiber from the coconut leaf midrib or by passing two leaflets from the bottom midrib around the several midribs in opposite directions and tying the ends together with overhand knots. The switch is discarded when the leaflets become dry.

Brooms (*valevale*) made from leaflet midribs are in common use to sweep up rubbish from the floor of dwelling or cook houses.

A short broom (*valevale tuaulu*, CB193) is made of midribs (*tua*) stripped from coconut leaflets and dried in the sun. These are caught about 1 inch from the proximal end in a three-ply braid of pandanus material (*lito*) about ½ inch wide. The projecting midrib ends are bent over and braided with one of the *lito* plies as a single ply. The braiding is continued for about 25 inches; for this length, about 170 midribs are required. When all the midribs have been added, the braiding is continued for about 6 inches and fastened with an overhand knot (*nukapona*). Starting with the commencement end, the braiding is rolled (*tupetupe*) on itself to form a convenient bundle of midribs. The free end of the braid is wound around the butt ends (*mulimuli*) of the midribs and fastened with an overhand knot. The distal ends of the midribs are trimmed off to make bristles about 2 feet long.

A large broom (*valevale uulo*) for sweeping the ground outside the houses is made from hard coconut midribs that have dried on the leaflets. The midribs are gathered together in the hand and spaced evenly around the end of a long handle, generally a length of *upungia* wood about 4 feet long. The butt ends of the midribs are fastened to the handle with transverse turns of sennit, commencement and finishing ends being buried underneath the turns.

Lighting inside the dwelling house is usually provided by burning a few dry coconut shells on the floor. Today kerosene lanterns are fairly common,